

ABSTRACT

A prosthesis for treating a body passage includes a micro-porous tubular element and a support element. The tubular element is formed from a thin-walled sheet having a wall thickness of 25 micrometers or less, preferably a coiled-sheet exhibiting temperature-activated shape memory properties. The mesh pattern includes a plurality of openings in the sheet having a maximum dimension of not more than about 200 micrometers, thereby acting as a filter trapping embolic material while facilitating endothelial growth therethrough. The support element includes a plurality of struts, preferably having a thickness of 100-150 micrometers. The support element is preferably an independent component from the tubular element. Alternatively, the support element may be attached to or integrally formed as part of the tubular element. The tubular and support elements are placed on a catheter in contracted conditions and advanced endoluminally to a treatment location within a body passage. The tubular element is deployed, and the support element is expanded to an enlarged condition at the treatment location to engage an interior surface of the tubular element, thereby securing the tubular element and holding the lumen of the treatment location open.